**Amendment to the Claims**

Claims 1-29. Cancelled.

30. (Currently amended) A method of producing a transgenic mouse comprising:

(a) introducing a mouse embryonic stem cell comprising a null allele of the endogenous melanocyte stimulating hormone receptor ~~allele~~ gene, said gene encoding mRNA comprising a polynucleotide sequence of SEQ ID NO:19, into a mouse blastocyst;

(b) introducing the blastocyst into a pseudopregnant mouse, wherein the pseudopregnant mouse gives birth to one or more chimeric mice; and

(c) breeding the chimeric mice to generate the transgenic mouse.

31. (Cancelled)

32. (Currently amended) A transgenic mouse whose genome comprises a null allele of the endogenous melanocyte stimulating hormone receptor ~~allele~~gene, wherein said endogenous ~~allele~~ gene encodes mRNA comprising a polynucleotide sequence of SEQ ID NO:19, wherein said null allele comprises a polynucleotide sequence encoding a selectable marker.

33. (Previously presented) A cell or tissue isolated from the transgenic mouse of claim 32.

34. (Previously presented) The transgenic mouse of claim 32, wherein said mouse is heterozygous for said null allele.

35. (Previously presented) The transgenic mouse of claim 32, wherein said mouse is homozygous for said null allele.

36. (Previously presented) The transgenic mouse of claim 32, wherein said selectable marker is a neomycin resistance gene.

37. (Previously presented) The transgenic mouse of claim 32, wherein said selectable marker is a *lacZ* gene.

38. (Previously presented) The transgenic mouse of claim 35 wherein said mouse demonstrates an increase in total distance traveled in the open field test, as compared to a wild-type control mouse.

39. (Currently amended) The transgenic mouse of claim 38 wherein said increase in total distance ~~travele~~traveled is an indication that said mouse is hypoactive, relative to a wild-type control mouse.